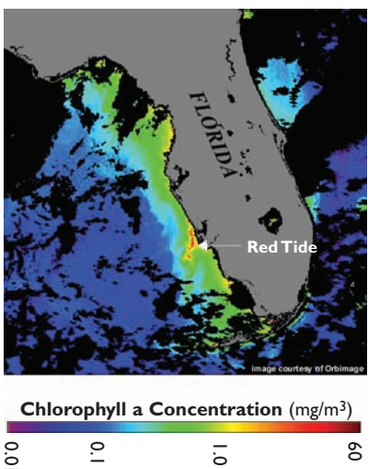

Chlorophyll concentration on 30 August, 2001 of eastern Gulf of Mexico. Red tides contain high concentrations of chlorophyll. (Data from SeaWiFS and ORBIMAGE.)

over large space and time scales. However, since other types of phytoplankton bloom in the Gulf of Mexico, red tide blooms must first be discriminated from blooms of non-toxic phytoplankton species. Results from a recent study, indicating that red tide blooms are less reflective than their non-toxic counterparts, are promising and may aid in the detection of red tides from space.

Using satellite ocean color imagery, scientists can now begin to address whether red tide bloom size, frequency, and duration are increasing in the Gulf of Mexico. In addition, satellite ocean color imagery may provide an early-warning system that allows state and local agencies to close shellfish beds and alert susceptible individuals with pulmonary weaknesses.

Forecasting red tide blooms may be enhanced by monitoring iron-rich atmospheric dust that originates from Africa's Saharan desert. Researchers have discovered that iron-deficient cyanobacterium, *Trichodesmium* spp., found in Gulf of Mexico waters, may provide a key nutrient source and fuel red tide blooms, when oceanic waters are fertilized by African dust.

Massive dust storm blowing from the northwest African desert westward across thousands of miles of the Atlantic Ocean in February, 2000. (Data from SeaWiFS and ORBIMAGE.)